Amendments to the Drawings

Please add new Figure 5 as shown on the attached new drawing sheet.

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Attachment: New Sheet 1 page

REMARKS

Examiner Objections – Drawings

Applicant has firstly amended claims 3, 7, 14 and 17 to remove the unnecessary phrase "the component" as there was no antecedent basis for "the component". Additionally, applicant has added new Figure 5 showing "the driving voltage is influenced by a product of the velocity of the sled actuator and/or the pickup head and a first multiplier", and "the driving voltage is influenced by a product of the acceleration of the sled actuator and/or the pickup head and a second multiplier", as is claimed in claims 3, 7, 14, and 17. No new matter is entered. In particular, Figure 5 is supported directly by the formula shown in Equation 1 (following paragraph [0020]) of the specification as originally filed.

Additionally, regarding the limitations "*the first multiplier is a variable determined by the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head*" and "*the second multiplier is a variable determined by the number of tracks remained to be crossed and the velocity of the sled actuator and/or the pickup head*" found in claims 4, 8, 14 and 17, applicant notes that new Figure 5 illustrates both the first and second multipliers being variables (KP, KD), which combined with the text of paragraph [0021] stating, "*The first multiplier KP is a variable determined by the number T and the velocity V. The second multiplier KD is also a variable determined by the number T and the velocity V*" should be found sufficient to illustrate the above quoted claim limitations.

New paragraph [0017.1] is added in the brief description of the drawings section to introduce new Figure 5, and paragraph [0020] is amended to reference new Figure 5. No new matter is added.

Withdrawal of the objections to the drawings is respectfully requested.

Claim Rejections – 35 U.S.C 112

Claims 2-10 and 12-20 have been amended in accordance to the Examiner's suggestions in order to distinctly claim the subject matter of the present invention in accordance with 35 U.S.C 112. Particular amendments made are outlined below as follows:

The insufficient antecedent basis "the movement of the sled actuator" in claims 2 and 12 has been properly amended to "a movement of the sled actuator".

The insufficient antecedent basis "the product of the velocity" in claim 3 has been properly amended to "a product of the velocity".

The limitation "the component influenced by the velocity of the sled actuator" in claims 3, 7, 14, and 17 has been removed. Therefore the insufficient antecedent basis in this above limitation is now moot.

Applicant points out that the above amendments are purely typographical in nature, and do not introduce new subject matter to the claims. As the antecedent basis matters above have been corrected through the above amendments, claims 2, 3, 7, 12, 14 and 17 should now be found allowable with regards to the 35 U.S.C 112 rejections. Claims 4-6, 8-10, 13, 15-16, 18-20 are dependent on the parent claims described above, and should also be found allowable as being dependent on allowable subject matter. Reconsideration for claims 2-10 and 12-20 is respectfully requested.

Claim Rejections – 35 U.S.C 102

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hung et al. (US 6,606,282)

Applicant asserts that Hung et al. (Hung hereinafter) do not fully teach the limitations described in claims 1-20 of the present invention. Responses to specific claim rejections are described further below.

Regarding claim 1, applicant asserts that Hung does not teach the limitation "*receiving acceleration information indicating an acceleration of the sled actuator and/or pickup head*". The Examiner has referenced Figs. 5-6 and Cols 4-6 of Hung for teaching this limitation, however, close Examination of Figs. 5-6 do not explicitly reveal acceleration information of the sled actuator being received or utilized by the system. Fig. 5 clearly shows Hung's long seek control system primarily operating based on control signals Vref (reference velocity), and Vest (estimated velocity), which in turn are based only on JT (target track), AT (actual track), RTC (residual track count) inputs.

Additionally, cols 4-6 of Hung also do not explicitly teach the receiving of acceleration information. Although Hung does teach "*acceleration discount factors of α1, α2, and α3*" (Col 4 line 61), these are merely mathematical constants which account for acceleration effects in determining the reference velocity (Vref) in equations 1-4 (Col 4 lines 40-45) of reference velocity mapping unit 502. Hung affirms this by teaching "*α1, α2, and α3 are the acceleration discount factors and α1<α2< α3, 0<α1,α2, α3<1* ", while Fig. 5 shows that velocity mapping unit 502 only receives a residual track count (RTC) as input, outputs reference velocity Vref, and does not process acceleration information. Therefore, although Hung does account for acceleration effects in reference velocity determination through the acceleration discount factors, Hung does not explicitly teach "*receiving acceleration information*" as stated in the limitation for claim 1.

Also, because Hung does not receive acceleration information as shown above, he cannot also teach the limitation "*driving the sled actuator to move according to...the acceleration information*" of claim 1. Hung alternatively teaches "*The estimated velocity Vest(emphasis added) is subtracted from the reference velocity Vref to obtain the sled*

control effort u, which is then outputted to the sled actuator 508, wherein the sled actuator 508 is used to move the sled" (Col 4 lines 3-6). Therefore, Hung teaches sled actuator control based on estimated velocity Vest and reference velocity Vref, and not "*driving the sled actuator to move according to...the acceleration information*" as described in the limitation of claim 1.

For at least the above-stated reasons, applicant asserts that Hung does not fully teach the limitations described in claim 1 of the present invention. Reconsideration for the allowance of claim 1 is respectfully requested.

Regarding claim 2, applicant asserts that Hung does not teach "*the controller outputs a driving voltage to control the movement of the sled actuator...the driving voltage is a function of the velocity and the acceleration of the sled actuator*". As shown above in remarks for claim 1, Hung teaches "*The estimated velocity Vest is subtracted from the reference velocity Vref to obtain the sled control effort u, which is then outputted to the sled actuator 508, wherein the sled actuator 508 is used to move the sled*" (Col 4 lines 3-6). This is verified through inspection of Fig. 5. Therefore, Hung teaches using only the estimated velocity and reference velocity in controlling the sled, and does not teach using the acceleration of the sled actuator to determine its control. Reconsideration for the allowance of claim 2 is respectfully requested.

Regarding claim 3, applicant has amended claim 3 to more distinctly claim the inventions subject matter. Specifically, the limitation "*the driving voltage is influenced by a product of the velocity of the sled actuator and/or pickup head and a first multiplier*" was added. This new limitation is fully supported in the existing specification in paragraphs 20-21, where the driving voltage U is a mathematical function of the product of velocity V and first multiplier KP. No new subject matter was introduced in this amendment.

In light of the above amendment, applicant asserts that Hung does not teach "*the*

driving voltage is influenced by a product of the velocity of the sled actuator and/or pickup head and a first multiplier" as stated in claim 3. Fig. 5 of Hung alternatively teaches that the sled control effort u is formulated by a difference between the reference velocity Vref and estimated velocity Vest. Therefore, because Hung does not use a product of velocity and a first multiplier, he does not teach the above described limitation. Reconsideration for the allowance of claim 3 is respectfully requested.

Regarding claim 4, applicant points out claim 4 is a dependent on parent claim 3 above. Should an allowance be made for claim 3 in light of the rationale provided, claim 4 should equally be allowed as being dependent on allowed matter. Reconsideration is respectfully requested.

Regarding claims 5-6, applicant points out that the Examiner does not explicitly identify a first multiplier as taught by Hung. However, in claim 4, the Examiner has identified the first multiplier as the track count sensor and velocity estimator. Applicant respectfully requests clarification as to what the Examiner identifies as the "first multiplier", as relating the track count sensor and velocity estimator to the first multiplier does not make logical sense in view of the limitations for claims 5-6 (i.e decreasing the first multiplier, increasing the first multiplier). Applicant asserts that the Examiners references for claims 5-6 therefore do not teach the limitations stated within the respective claims. Reconsideration for claims 5-6 is respectfully requested.

Regarding claim 7, applicant has amended claim 3 with the limitation "*the driving voltage is influenced by a product of the acceleration of the sled actuator and/or pickup head and a second multiplier*". This new limitation is fully supported in the existing specification in paragraphs 20-21, where the driving voltage U is a mathematical function of the product of acceleration A and second multiplier KD. No new subject matter was introduced in this amendment.

Applicant asserts that Hung does not therefore teach "*the driving voltage is*

influenced by a product of the acceleration of the sled actuator and/or pickup head and a second multiplier" as described in currently amended claim 7. Fig. 5 of Hung alternatively teaches that the sled control effort u is derived from a difference between the reference velocity Vref and estimated velocity Vest. Therefore, Hung does not use a product of both acceleration and a second multiplier, and does not teach the above described limitation. Reconsideration for the allowance of claim 7 is respectfully requested.

Regarding claims 8-10, applicant points out that the Examiner does not explicitly identify a second multiplier as taught by Hung. Applicant respectfully requests clarification as to what the Examiner identifies as the "second multiplier" to prevent any misunderstanding in subsequent prosecution. Examination of the teachings of Hung do not readily reveal a "second multiplier" described as such through claims 8-10. Applicant asserts that the Examiners references for claims 8-10 therefore do not clearly teach the limitations stated, and respectfully requests reconsideration for claims 8-10.

Regarding claim 11, applicant points out claim 11 is a dependent on parent claim 1 above. Should an allowance be made for claim 1 in light of the rationale provided, claim 11 should equally be allowed as being dependent on allowed matter. Reconsideration is respectfully requested.

Regarding claim 12, please see remarks above for claim 1.

Regarding claim 13, please see remarks above for claim 2.

Regarding claim 14, please see remarks above for claims 3-4.

Regarding claim 15-16, please see remarks above for claims 5-6.

Regarding claim 17, please see remarks above for claims 7-8.

Regarding claim 18-20, please see remarks above for claims 9-11.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

Winston Hsu Date: 04.25.2007

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